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JTL CABINET CONTROLLER ITEM NUMBERS					LCDC	
ITEM	DESCRIPTION	CODE	CODE MEANING	BIT	RANGE	ITEM 9 VALUE
				4321		
1. Jnet NETWORK IDENTIFICATION						
0	Unit type	Lcdc	Unit type			
19	Software Version number					
1	Unit number				0.1 - 899.8	
2. TEMPERATURES						
The LCDC controller is designed for use with 2 evaporators. Evaporator 1 controls the "inner" cabinet temperature while evaporator 2 controls the "outer" air curtain temperature.						
2.1 CABINET (EVAPORATOR 1)						
20	Estimated cabinet temperature (calculated from Air on and Air off temperatures using the cabinet temperature ratio Item 33)					
33	Cabinet temperature ratio				20 - 80	50
21	Air on temperature					
61	Air on sensor selection	OFF AO.En	Disabled Enabled		0 - 1	AO.En
22	Air off temperature					
62	Air off sensor selection	OFF A.1.En	Disabled Enabled		0 - 1	A.1.En
23	Evaporator temperature					
64	Evaporator sensor selection	OFF E.1.En	Disabled Enabled		0 - 1	E.1.En
24	Suction line temperature					
66	Suction line sensor selection	OFF S.1.En	Disabled Enabled		0 - 1	S.1.En
25	Superheat Evaporator temp - suction line temp					
2.2 AIR CURTAIN (EVAPORATOR 2)						
26	Air off temperature					
63	Air off sensor selection	OFF A.2.En	Disabled Enabled		0 - 1	A.2.En
27	Evaporator sensor temperature					
65	Evaporator sensor selection	OFF E.2.En	Disabled Enabled		0 - 1	E.2.En
28	Suction line sensor temperature					
67	Suction line sensor enabled	OFF S.2.En	OFF Enabled		0 - 1	S.2.En
29	Superheat (Evaporator temp - suction line temp)					

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3. TEMPERATURE ALARMS There are 2 overtemperature alarms on the LCDC controller a) Air off temperature (cabinet temperature evaporator) b) Air off temperature (air curtain evaporator) Both alarms use a common overtemperature tolerance averaging period.						
32	Overtemperature alarm tolerance	0.0	Disable Ht alarm	xxCC xxCO xxOC xxOO	0 - 20 0 - 20 0 - 20 0 - 20	10 10 5 10
47	Period over which averages are taken				00:30 - 03:00	01:00
3.1 CABINET (EVAPORATOR 1)						
38	Average Air off temperature error					
30	Air off temperature setpoint (target for item 22)			xxCC xxCO xxOC xxOO	-39 to -20 -39 to -20 -10 to +5 -10 to +5	-20 -30 -1 +1
3.2 AIR CURTAIN (EVAPORATOR 2)						
39	Average Air off temperature error					
31	Air off temperature setpoint (for alarm purposes only)			xxCC xxCO xxOC xxOO	- 39 to -20 - 39 to -20 - 10 to +5 - 10 to +5	- 27 - 36 - 4 - 2
4. CABINET TEMPERATURE CONTROL The temperature control strategy for the LCDC controller is for cabinets which have an air curtain to minimise the cabinet temperature variations. The air curtain temperature is not controlled by the LCDC controller, only monitored. The cabinet temperature is controlled by setting a fixed air off temperature on item 30 which is the target for the air off temperature displayed on item 22.						
30	Air off temperature setpoint			xxCC xxCO xxOC xxOO	-39 to -20 -39 to -20 -10 to +5 -10 to +5	-20 -30 -1 +1
48	Max starts/hour (Anti-shortcycling timer when using liquid valve relay to control a condensing unit)	0 1 2 3	unlm 10.PH 15.PH 20.PH	Unlimited 10 starts per hour 15 starts per hour 20 starts per hour	0 - 3	0

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5. INPUTS & OUTPUTS						
70	Operating mode	rEFr dEFr dF.rc	Refrigeration Defrost Defrost recovery			
71	Defrost input (up to v0.00.2)	OFF dF.IP	No input Defrost input on			
71	Inputs (v0.00.3 on)	IP1- IP-2 IP1 2	Defrost input on Lighting override input on Both inputs on			
72	Defrost relay (function depends on item 75)	0 or oFF dt.on dc.on	Relay deenergised Defrost termination on Defrost control on			
73	Liquid solenoid relay (controlled by cabinet air off temperature)	OFF LS.on	Off Demanding refrig.			
74	FANS/Heater relay	oFF Fn.on Hr.on	Off Fans on Heater on			
75	Defrost relay mode selection	d.tEr d.Con	Defrost termination Defrost control		0 - 1	d.tEr
104	Auxiliary output selection	0 1 2 3	nonE FAn.S Htr.S OFF		0 - 3	Not used

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6. DEFROST CONTROL						
6.1 DATA & STRATEGIES						
40	Duration of last defrost					
41	Time since end of last defrost					
42	Duration of current defrost					
45	Defrost strategy	0 1	CU.In SL.in	Network initiated Suction initiated	0 - 1	SL.In
69	No of defrosts expected per day	0 1 - 6		Function disabled No of defrosts	0 - 6	3
6.2 SUCTION INITIATED DEFROST						
58	Defrost initiation temperature (air curtain suction line sensor)				xxCC -5 - +20 xxCO -5 - +20 xxOC 0 - 20 xxOO 0 - 20	0 0 +15 +10
6.3 Jnet NETWORK INITIATED DEFROST						
46	Jnet Network initiated defrost command status	P.dEF F.dEF 0 or nonE		Defrost Forced defrost No command		
6.4 DEFROST TERMINATION						
50	Defrost termination temperature				xxCC 0 - 20 xxCO 0 - 20 xxOC 0 - 20 xxOO 0 - 20	15 15 12 20
57	Maximum defrost duration				xxCC 00:05 - 00:40 xxCO 00:05 - 00:40 xxOC 00:05 - 00:59 xxOO 00:05 - 00:59	00:20 00:20 00:20 00:40
49	Liquid hold off duration (for defrost initiated by voltage free contact - Item 71 or network initiation)					00:00 - 00:10 00:00
6.5 DEFROST FORCING FUNCTIONS						
Forced functions remain forced if the Maintenance Unit remains plugged in. They are automatically cancelled 30 minutes after the Maintenance Unit is unplugged.						
77	Forced defrost	OFF Fd.on		Off Forced defrost on		0 - 1
78	Inhibit defrost	OFF no.dF		Off No defrosts		0 - 1
79	Forced refrigeration	OFF Fr.on		Off Forced refrigeration		0 - 1

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7. Jnet NETWORK LIGHTING CONTROL						
Forced functions remain forced if the Maintenance Unit remains plugged in. They are automatically cancelled 30 minutes after the Maintenance Unit is unplugged.						
110	Select Jnet network lighting control	OFF LC.on	off Lighting control function selected		0 - 1	LC.on
113	Lights and blinds	on L.OFF	Lights on and blinds up Lights off and blinds down			
111	Jnet network lighting unit network command	LU.Co 0	Lighting off command No command			
112	Over ride input	OFF L.O.IP	No input Over ride input on			
118	Lighting contactor type selection (shown for lights-on state) (v0.00.1 on)	n.o n.c	normally open normally closed		0 - 1	n.c
120	Lighting override timer (time delay before lighting off/blinds close on network control) (v0.00.1 on)				00:30 - 02:00	02:00
116	Manual lights on (v0.00.1 on)	OFF	Not used			
117	Manual lights off (v0.00.1 on)	OFF	Not used			
114	Force lights on	OFF L.on	Off Lights on		0 - 1	
115	Force lights off	OFF L.OFF	Off Lights off		0 - 1	
8. DISPLAY FUNCTIONS						
136	Enable fans only operation from display switches	Off E.d.Fo	Disable Enable		0 - 1	Off
138	Enable Shutdown from display switches	OFF E.d.Sd	disable Enable		0 - 1	Off
121	Display switch 1 status (v0.00.1 on)	OFF	Not used			
122	Display switch 2 status (v0.00.1 on)	OFF	Not used			
9. CLOCK CALENDAR						
Note, from v0.00.3, the time and date can be displayed as standard or daylight saving (summer) time. This choice is made on item 18. When daylight saving is chosen and the controller is connected to a JTL Network Controller supporting daylight saving operation, the change is made automatically to the current EU directive.						
2	Time of day				00:00 - 23:59	
3	Day of week (v0.00.3 on)	Sun - Sat	0 = Sunday 1 = Monday			
4	Date (v0.00.3 on)				01:01 - 31:12	
5	Year (v0.00.3 on)				v0.00.3 1992-2022 v0.00.4 on 2004-2034	
18	Daylight saving enable (v0.00.3 on)	Stnd dAY.S	Standard time Daylight saving time		0 - 1	Stnd

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10. RESTORE FACTORY DEFAULTS						
To set the factory defaults into the memory of the controller, first set the bitswitches as shown, then set item 9 to 1234. This should be done on initial commissioning of the unit or when the unit is being installed as a replacement part.						
9	Set default values selected by Bitswitch Note: Setting the bitswitches alone has no effect.	1	Set default values (up to v0.00.2)	xxCC xxCO xxOC xxOO	Frozen food Ice cream Chiller Produce (off cycle)	
		1234	Set default values (v0.00.3 on)			
		1066	Write to NVRAM without delay (v0.00.3 on)			
11. SYSTEM ALARMS						
80	Group alarm 81 - 88	0 1 - 255	No alarms Check 81 - 88			
81	Cabinet air off overtemperature	CLr A.1.Ht	No fault Fault			
82	Air curtain air off overtemperature	CLr A.2.Ht	No fault Fault			
83	Air on sensor fault	CLr AO.Pr	No fault Fault			
84	Cabinet air off sensor fault	CLr A.1.Pr	No fault Fault			
85	Air curtain air off sensor fault	CLr A.2.Pr	No fault Fault			
86	Sensor power supply fault	CLr PS.Ft	No fault Fault			
87	Unit number corrupted/not set	CLr Un.CF	No fault Fault			
88	All sensors faulty, deselected or disconnected	CLr t.SEn	No fault Fault			
90	Group alarm 91 - 98	0 1 - 255	No alarms Check 91 - 98			
91	Cabinet evaporator sensor fault	CLr E.1.Pr	No fault Fault			
92	Air curtain evaporator sensor fault	CLr E.2.Pr	No fault Fault			
93	Cabinet suction line sensor fault	CLr S.1.Pr	No fault Fault			
94	Air curtain suction line sensor fault	CLr S.2.Pr	No fault Fault			
95	Expected defrosts have not been detected	CLr dEF.F	No fault Fault			

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96	Lighting control override operated (v0.00.0 only)	CLr L.or	No fault Fault			
12. DIAGNOSTIC & TEST FUNCTIONS						
44	Power off duration					
6	Communications speed (in kilo baud)	600 4800	Baud rate Baud rate			
973	Latest polling interval This time shows the polling interval between the last two successful network awake messages to this unit.	min:sec				
974	Time since last awake message	min:sec				
975	Network receive timer Each time a message is read correctly the timer is set to 10 it counts down. If the timer reaches 0 then the communications module is reset.	seconds	(counts down to 0)			
976	Network receive bad character counter The counter counts down from a preset number. When the counter reaches 0 the communications module is reset.		(counts down to 0)			
977	Transmit control line status for the operation of the Jnet network communications.	Hi Lo	Transmit Receive			
8	Bitswitch setting	0 1 2 3	Frozen food Ice cream Chiller Produce (off cycle)	xxCC xxCO xxOC xxOO		
89	Sensor excitation value (Factory test)		Not used			
99	Test digital display	CLr SEt	Not active Test active		0 - 1	
101			Not used			
421	v0.00.3 on	Temperature sensor 1 reading				
422		Temperature sensor 2 reading				
423		Temperature sensor 3 reading				
424		Temperature sensor 4 reading				
425		Temperature sensor 5 reading				
426		Temperature sensor 6 reading				
427		Temperature sensor 7 reading				
10	Processor alarms (11 - 17)	0 1 - 255	No alarms Check 11 - 17			
11	Static RAM fault	CLr rA.Ft	No fault Fault			

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12	Program/counter fault	CLr PC.Ft	No fault Fault			
13	Stack pointer fault	CLr SP.Ft	No fault Fault			
14	Background loop fault	CLr bL.Ft	No fault Fault			
15	PROM checksum fault	CLr Pr.Ft	No fault Fault			
16	NVRAM fault	CLr n.Ft	No fault Fault			
17	Instruction TRAP fault	CLr tP.Ft	No fault Fault			

DISPLAY DATA		LCDC
NORMAL DISPLAY		
- 99 ^c	Cabinet temperature (item 20 rounded)	
dEF	Defrost	
dEFr	Defrost recovery	
--	Display data error	
ALARM TEXT (in descending priority order)		
t.SEn	All probes faulty, deselected or disconnected	
Ht	High air off temperature	
OTHER TEXT		
JTL	Start-up text	